

REMARKS

Claims 1, 3, 5-20, 22-44 and 46-50 remain in the application. Claims 22-44, 48 and 49 stand allowed. Claim 6 is indicated as containing allowable subject matter. Applicant respectfully requests reconsideration.

Claim 50 was objected to as being in improper form. Applicant has amended claim 50 in a manner which hopefully overcomes the objection.

Applicant respectfully requests that this objection be withdrawn.

Claim 10 was rejected under 35 U.S.C. §112 for failing to particularly point out and distinctly claim the subject matter which applicant regards as his invention. Claim 10 has been amended in a manner which hopefully overcomes this rejection.

Applicant respectfully requests that this rejection be withdrawn.

Claims 1, 3, 5, 7, 9-12, 17, 18 and 46 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Diekmann et al.* (US 6,989,549) in view of *Herman et al.* (US 5,495,747) and *Wong* (US 5,502,308). Applicant respectfully traverses.

The Office Action contends that *Herman et al.* teaches a gas sensor in which radiation detector elements extend through apertures in a cover within some form of housing and that it would be obvious to transpose this arrangement into the apparatus disclosed in *Diekmann et al.* The Office Action contends that *Wong* teaches the use of a plastic member serving as a cover for the radiation source detectors which “reduces and seals the free volume” in the cavity. The Office Action asserts that the resiliency of the material recited in claim 1 is insufficient to distinguish the claim from the combination of *Diekmann et al.*, *Herman et al.* and *Wong*.

Applicant respectfully suggests that it would not be obvious to modify *Diekmann et al.* according to *Herman et al.* or *Wong* as suggested in the Office Action. However, even if

such a combination were made, the combination would not solve the problems addressed and solved by the present invention.

Herman et al. relates to a pellistor gas sensor which is distinct from detectors based on the optical absorption principle, as is the present invention. The assertion in the Office Action that “radiation detector elements” extend through apertures in the cover of *Herman et al.* is wrong. The elements in question are pellistor elements and not radiation detectors. Pellistor elements comprise beads of catalytic material on a resistive wire, the aim of which is to provide a hot catalytic surface on which the target gas would react, changing the temperature, and therefore, resistance of the elements. Such a structure has no optical capability.

When using a pellistor type gas sensor, the detector elements must sit within the gas cavity and be exposed to the gas under test in order to make any measurements. The reason for the interior housing 160 and flow detector 180 within the pellistor body of *Herman et al.* is to direct and enhance gas flow around each of the pellistor elements. This is completely contrary to the aims of the present invention where the rubber bung is provided to prevent gas flow around the electronic components.

The Office Action suggests that the skilled man would be motivated to implement the arrangement disclosed in *Herman et al.* “in order to provide adequate protection as well as the direction of gas flow in the apparatus of *Diekmann et al.*”

Such a conclusion is completely contrary to an understanding of the functions of a pellistor-type sensor and an optical absorption sensor. The two function quite differently. *Diekmann et al.* has absolutely no desire to direct or enhance gas flow around the radiation detector or emitter. In optical absorption sensors, the radiation emitter and detector are commonly hermetically sealed from the gas environment to protect the components.

The *Wong* reference relates to an NDIR apparatus. The Office Action points to cap 32 of *Wong* which includes some form of shaped plastic mount for supporting the IR emitter and receiver. *Wong* is silent on any additional function of this mounting. The reasoning in the Office Action that the cap “reduces and seals the free volume in the cavity” is not supported by, and is contrary to the *Wong* disclosure because the cap is already sealed from the cavity by virtue of gas filter cell 50. *Wong* is silent on the nature of the plastic material used. The assertion in the Office Action that a skilled man would be motivated to use the material of *Wong*’s cap 32 in the cover of *Diekmann et al.* is not based in the prior art.

Claims 1 and 46 have been amended to provide minor clarifications to the last phrase of the claim in order to specify that the resilient member extends between the PCB and the lower surface of the upper wall of the electronic housing.

This is clearly not the case in *Herman et al.* wherein the internal housing is inside the gas cavity itself. The claims as amended clearly set forth that the upper wall of the electronic housing divides the resilient member from the gas cavity.

This is not the case in *Wong* wherein in Figure 2 *Wong* shows that the plastic cap 32 does not extend between the two PCB’s and the gas cavity wall because there is a space between the hole of each PCB and the filter cell 50.

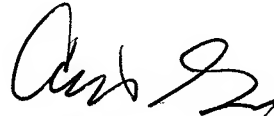
Applicant respectfully requests that this rejection be withdrawn.

Applicant appreciates the allowability of Claims 22-44, 48-49 and the indication of allowance of claim 6.

In light of the above amendment and remarks, applicant respectfully requests that all the claims be allowed and this application passed to issue.

Respectfully submitted,

SNELL & WILMER L.L.P.



Albin H. Gess
Registration No. 25,726
600 Anton Boulevard, Suite 1400
Costa Mesa, California 92626
Telephone: (714) 427-7020
Facsimile: (714) 427-7799